

FORM PTO-1390 (Modified) REV. 11-98		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		ATTORNEY'S DOCKET NUMBER STERFL/P007A1	
TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A FILING UNDER 35 U.S.C. 371				U.S. APPLICATION NO. (IF KNOWN, SEE 37 CFR) <div style="font-size: 1.5em; font-weight: bold; text-align: center;">09/646745</div>	
INTERNATIONAL APPLICATION NO PCT/EP99/01934		INTERNATIONAL FILING DATE 22.03.99 (March 22, 1999)		PRIORITY DATE CLAIMED 21.03.98 (March 21, 1998)	
TITLE OF INVENTION <div style="text-align: center; font-weight: bold; margin-top: 10px;">PLATED GRINDING TOOL</div>					
APPLICANT(S) FOR DO/EO/US <div style="text-align: center; font-weight: bold; margin-top: 10px;">MARION WENDT-GINSBERG and FRANK WENDT</div>					
Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information					
<ol style="list-style-type: none"> 1. <input checked="" type="checkbox"/> This is a FIRST submission of items concerning a filing under 35 U.S.C. 371 2. <input type="checkbox"/> This is a SECOND or SUBSEQUENT submission of items concerning a filing under 35 U.S.C. 371. 3. <input checked="" type="checkbox"/> This is an express request to begin national examination procedures (35 U.S.C. 371(f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 371(b) and PCT Articles 22 and 39(1). 4. <input checked="" type="checkbox"/> A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date 5. <input checked="" type="checkbox"/> A copy of the International Application as filed (35 U.S.C. 371 (c) (2)) <ol style="list-style-type: none"> a. <input type="checkbox"/> is transmitted herewith (required only if not transmitted by the International Bureau). b. <input checked="" type="checkbox"/> has been transmitted by the International Bureau. c. <input type="checkbox"/> is not required, as the application was filed in the United States Receiving Office (RO/US). 6. <input type="checkbox"/> A translation of the International Application into English (35 U.S.C. 371(c)(2)). 7. <input checked="" type="checkbox"/> A copy of the International Search Report (PCT/ISA/210). 8. <input checked="" type="checkbox"/> Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371 (c)(3)) <ol style="list-style-type: none"> a. <input type="checkbox"/> are transmitted herewith (required only if not transmitted by the International Bureau). b. <input type="checkbox"/> have been transmitted by the International Bureau. c. <input type="checkbox"/> have not been made; however, the time limit for making such amendments has NOT expired. d. <input checked="" type="checkbox"/> have not been made and will not be made. 9. <input type="checkbox"/> A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)). 10. <input type="checkbox"/> An oath or declaration of the inventor(s) (35 U.S.C. 371 (c)(4)). 11. <input checked="" type="checkbox"/> A copy of the International Preliminary Examination Report (PCT/IPEA/409). 12. <input type="checkbox"/> A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371 (c)(5)). but see letter regarding same included herewith. 					
Items 13 to 20 below concern document(s) or information included:					
<ol style="list-style-type: none"> 13. <input type="checkbox"/> An Information Disclosure Statement under 37 CFR 1.97 and 1.98. 14. <input type="checkbox"/> An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included. 15. <input checked="" type="checkbox"/> A FIRST preliminary amendment. (7 pages) plus Abstract (1 page) 16. <input type="checkbox"/> A SECOND or SUBSEQUENT preliminary amendment. 17. <input type="checkbox"/> A substitute specification. 18. <input type="checkbox"/> A change of power of attorney and/or address letter 19. <input checked="" type="checkbox"/> Certificate of Mailing by Express Mail 20. <input checked="" type="checkbox"/> Other items or information <div style="border: 1px solid black; padding: 5px; margin-top: 5px;"> <ol style="list-style-type: none"> a. Letter Recognizing Attorneys b. WO 99/48647 (Ger. Lang.) - Front Page with Abstract (1 page), Specification (16 pages), Claims (5 pages), Drawings (4 sheets) c. Search Report (Ger. Lang.) (3 pages) d. Search Report (Eng. Lang.) (3 pages) e. International Preliminary Examination Report ("IPER") (Ger. Lang.) (PCT/IPEA/409) (6 pages) f. Letter Regarding Missing Annexes to IPER (2 pages) g. PCT Chapter II Demand (Ger. Lang.) (PCT/IPEA/401) (4 pages) h. Art. 34 Amendments (Ger. Lang.) (8 pages) i. Art. 34 Amendments (Eng. Lang.) (7 pages) </div> 					

430 Rec'd PCT/PTO 21 SEP 2000

U.S. APPLICATION NO. (IF KNOWN, SEE 37 CFR 1.53(a))	INTERNATIONAL APPLICATION NO.	ATTORNEY'S DOCKET NUMBER
09/646745	PCT/EP99/01934	STERFL/P007A1

21. The following fees are submitted:				CALCULATIONS PTO USE ONLY	
BASIC NATIONAL FEE (37 CFR 1.492 (a) (1) - (5)) :					
<input type="checkbox"/> Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO and International Search Report not prepared by the EPO or JPO \$970.00					
<input checked="" type="checkbox"/> International preliminary examination fee (37 CFR 1.482) not paid to USPTO but International Search Report prepared by the EPO or JPO \$840.00					
<input type="checkbox"/> International preliminary examination fee (37 CFR 1.482) not paid to USPTO but international search fee (37 CFR 1.445(a)(2)) paid to USPTO \$690.00					
<input type="checkbox"/> International preliminary examination fee paid to USPTO (37 CFR 1.482) but all claims did not satisfy provisions of PCT Article 33(1)-(4) \$670.00					
<input type="checkbox"/> International preliminary examination fee paid to USPTO (37 CFR 1.482) and all claims satisfied provisions of PCT Article 33(1)-(4) \$96.00					
ENTER APPROPRIATE BASIC FEE AMOUNT =				\$840.00	
Surcharge of \$130.00 for furnishing the oath or declaration later than months from the earliest claimed priority date (37 CFR 1.492 (e)). <input type="checkbox"/> 20 <input checked="" type="checkbox"/> 30				\$130.00	
CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE		
Total claims	19 - 20 =	0	x \$18.00	\$0.00	
Independent claims	3 - 3 =	0	x \$78.00	\$0.00	
Multiple Dependent Claims (check if applicable). <input type="checkbox"/>				\$0.00	
TOTAL OF ABOVE CALCULATIONS =				\$970.00	
Reduction of 1/2 for filing by small entity, if applicable. Verified Small Entity Statement must also be filed (Note 37 CFR 1.9, 1.27, 1.28) (check if applicable). <input type="checkbox"/>				\$0.00	
SUBTOTAL =				\$970.00	
Processing fee of \$130.00 for furnishing the English translation later than months from the earliest claimed priority date (37 CFR 1.492 (f)). <input type="checkbox"/> 20 <input checked="" type="checkbox"/> 30				\$130.00	
TOTAL NATIONAL FEE =				\$1,100.00	
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31) (check if applicable). <input type="checkbox"/>				\$0.00	
TOTAL FEES ENCLOSED =				\$1,100.00	
				Amount to be: refunded	\$
				charged	\$

- ☒ A check in the amount of \$1,100.00 to cover the above fees is enclosed.
- ☐ Please charge my Deposit Account No. _____ in the amount of _____ to cover the above fees.
A duplicate copy of this sheet is enclosed.
- ☒ The Commissioner is hereby authorized to charge any fees which may be required, or credit any overpayment to Deposit Account No. 500287 A duplicate copy of this sheet is enclosed.

NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.

SEND ALL CORRESPONDENCE TO:

Raymond J. Harmuth, Esq.
Doepken Keevican & Weiss
58th Floor - USX Tower
600 Grant Street
Pittsburgh, PA 15219-2703
Telephone: (412) 355-2600
Facsimile: (412) 355-2609

SIGNATURE

Raymond J. Harmuth, Esq.

NAME

33,896

REGISTRATION NUMBER

September 21, 2000

DATE

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application: : Express Mail Label No.:
MARION WENDT-GINSBERG : EL234279752US
FRANK WENDT :
: PLATED GRINDING TOOL
International Application No.: :
PCT/EP99/01934 :
International Filing Date: : Atty's Docket No.: STERFL/P007A1
22 March 1999 :
Priority Date Claimed: : Date of Deposit: September 21, 2000
21 March 1998 :
Serial No.: Not Yet Assigned :
Filed: Concurrently Herewith :

PRELIMINARY AMENDMENT

BOX PCT
Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

Prior to initial examination, please amend the above-identified patent application as follows.

IN THE CLAIMS:

Please cancel claims 1-18 without prejudice, and insert claims 19-37 as follows:

--19. A flap-type grinding tool, which is configured symmetrically about an axis of rotation comprising:

- a) an outer portion;
- b) a plurality of abrasive flaps disposed on the outer portion wherein the outer portion is selected from the group consisting of a periphery, end faces, and combinations thereof;

- c) a support body on which the abrasive flaps are fixed; and
- d) a device for connecting the flap-type grinding tool to a drive apparatus,
wherein the support body has at least one rotationally symmetrical
lateral surface on which the abrasive flaps are at least partly fixed, and
wherein the support body comprises at least one central element
configured as a disk which extends essentially radially to the axis of
rotation and the device for connecting the flap-type grinding tool to a
drive apparatus has at least one contact surface formed by the disk for
connecting the flap-type grinding tool to a drive apparatus and the
support body further comprises a carrier ring on whose radially
outermost outside one of the lateral surfaces is formed approximately
parallel to the axis of rotation or at least inclined at less than 75
degrees to the axis of rotation.

20. The flap-type grinding tool of claim 19 wherein the disk is sufficiently angled in the region of the contact surface such that the contact surface is disposed axially outside a body of rotation described by the outside edges of the abrasive flaps.

21. The flap-type grinding tool of claim 19 wherein the disk is produced from a material wherein the material is selected from the group consisting of plastic, fiber-reinforced plastic, aluminium, steel, and combinations thereof.

22. The flap-type grinding tool of claim 19 wherein the carrier ring is produced from a material wherein the material is selected from the group consisting of plastic, fiber-reinforced plastic, hard rubber, hard paper, aluminium, steel, and combinations thereof.

group consisting of a coarse-pitched thread, a rectangular thread, a trapezoidal thread, and combinations thereof.

31. The flap-type grinding tool of claim 19 wherein the device for connecting the flap-type grinding tool to a drive apparatus comprises a shaft connected to the support body in a manner fixed in rotation, and the support body comprises a synthetic resin body, in which the abrasive flaps and the shaft are directly
5 embedded, and wherein the support body integrally forms the disk and the carrier ring.

32. The flap-type grinding tool of claim 31 wherein the support body is produced by at least partial casting of a resin wherein the resin is selected from the group consisting of a plastic resin, a synthetic resin, and combinations thereof into a space formed between the abrasive flaps, positioned relative to one another, and
5 the shaft.

33. The flap-type grinding tool of claim 31 wherein the support body comprises at least partially of a paper wherein the paper is selected from the group consisting of hard paper, fiber material, and combinations thereof.

34. The flap-type grinding tool of claim 28 wherein the rapid clamping apparatus is configured to connect the flap-type grinding tool to the drive apparatus.

35. The flap-type grinding tool of claim 19 wherein the disk is configured as a rapid clamping apparatus.

36. A flap-type grinding tool, which is configured symmetrically about an axis of rotation comprising:

- a) an outer portion;
- b) a plurality of abrasive flaps disposed on the outer portion wherein the

5 outer portion is selected from the group consisting of a periphery, end faces, and combinations thereof;

c) a support body on which the abrasive flaps are fixed, and wherein the support body has at least one rotationally symmetrical lateral surface on which the abrasive flaps are at least partly fixed; and

10 d) a device for connecting the flap-type grinding tool to a drive apparatus, wherein the device for connecting the flap-type grinding tool to a drive apparatus is formed by an automatically acting clamping apparatus wherein the clamping apparatus is selected from the group consisting of an eccentric clamping apparatus and a centrifugal clamping apparatus
15 and the support body further comprises a carrier ring on whose radially outermost outside one of the lateral surfaces is formed approximately parallel to the axis of rotation or at least inclined at less than 75 degrees to the axis of rotation.

37. A flap-type grinding tool, which is configured symmetrically about an axis of rotation comprising:

a) an outer portion;

b) a plurality of abrasive flaps disposed on the outer portion wherein the
5 outer portion is selected from the group consisting of a periphery, end faces, and combinations thereof;

c) a support body on which the abrasive flaps are fixed, and wherein the support body has at least one rotationally symmetrical lateral surface on which the abrasive flaps are at least partly fixed, and

10 d) wherein said support body is configured to receive a device for connecting the flap-type grinding tool to a drive apparatus by an

1. General Information	
Item	Value
1.1. Name of the project	Project A
1.2. Date of completion	2023-10-26
1.3. Location	City X, Country Y
1.4. Client	Client Z
1.5. Project Manager	John Doe
1.6. Project Sponsor	Jane Smith
1.7. Project Budget	\$1,000,000
1.8. Project Status	Completed
1.9. Project Description	Development of a new software application for data analysis.
1.10. Project Objectives	Develop a scalable, secure, and user-friendly data analysis tool.
1.11. Project Risks	Low risk of failure due to thorough planning and execution.
1.12. Project Deliverables	Final software application, user manual, and project report.
1.13. Project Milestones	Project start, development phase, testing phase, and project completion.
1.14. Project Stakeholders	Client, Project Manager, Development Team, and Testing Team.
1.15. Project Communication	Regular meetings and reports to the client and project sponsor.
1.16. Project Documentation	Project charter, requirements, and project plan.
1.17. Project Performance	On time, on budget, and meeting all requirements.
1.18. Project Feedback	Positive feedback from the client and project sponsor.
1.19. Project Lessons Learned	Thorough planning and communication are key to project success.
1.20. Project Conclusion	The project was completed successfully and met all objectives.

{P0023176:2}

REMARKS

Amendments have been made to the specification and the claims to eliminate multiple dependent claims and to place the application in conformance with standard United States patent practice.

Specifically, eighteen claims, namely claims 1-18, stood pending in the international application. With this Preliminary Amendment, claims 1-18 will be cancelled and claims 19-37 will be newly added. With this Preliminary Amendment, nineteen claims, will then be pending, including the three independent claims, claim 19, 36, and 37.

An Abstract of the Disclosure has been added as a separately typed page to be inserted after the claims. This Abstract of the Disclosure is attached to this Preliminary Amendment.

Examination and allowance of claims 19-37 are respectfully requested.

Respectfully submitted,

DOEPKEN KEEVICAN & WEISS

By: Raymond J. Harmuth

Raymond J. Harmuth
Registration No. 33,896
USX Tower, 58th Floor
600 Grant Street
Pittsburgh, PA 15219-2703
Telephone: (412) 355-2600
Facsimile: (412) 355-2609

PLATED GRINDING TOOL

ABSTRACT OF THE DISCLOSURE

The invention relates to a plated grinding tool which is symmetrically configured around an axis of rotation. Said plated grinding tool comprises a plurality of grinding plates arranged on the periphery and/or on the faces, and comprises a support body on which said grinding plates are fixed. The plated grinding tool also comprises a device for connecting the plated grinding tool to a drive device. The support body has at least one rotationally symmetric lateral surface on which the grinding plates are at least partially fixed. According to the invention, the support body comprises at least one central element which is configured as a disc and which extends in an essentially radial manner in relation to the axis of rotation. In addition, the device for connecting the plated grinding tool to a drive device has a locating face, said face being formed by the disc, which is provided for connecting the plated grinding tool to a drive device. The support body additionally comprises a carrier ring, a rapid clamping device for connecting the plated grinding tool to a drive device, and a set made up of a plated grinding tool and a rapid clamping device.

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**STATEMENT CLAIMING SMALL ENTITY STATUS
(37 CFR 1.9(f) & 1.27(c))--SMALL BUSINESS CONCERN**

Docket Number (Optional)
STERFL/P007A1

Applicant, Patentee, or Identifier: MARION WENDT-GINSBERG and FRANK WENDT

Application or Patent No.: Not Yet Assigned

Filed or Issued: September 21, 2000

Title: PLATED GRINDING TOOL

I hereby state that I am

- ☐ the owner of the small business concern identified below:
☒ an official of the small business concern empowered to act on behalf of the concern identified below:

NAME OF SMALL BUSINESS CONCERN M&F ENTWICKLUNGS - UND PATENTVERWERTUNGS-GmbH

ADDRESS OF SMALL BUSINESS CONCERN Werner-von-Siemens-Strasse 5
D-51570 Windeck, Germany

I hereby state that the above identified small business concern qualifies as a small business concern as defined in 13 CFR Part 121 for purposes of paying reduced fees to the United States Patent and Trademark Office. Questions related to size standards for a small business concern may be directed to: Small Business Administration, Size Standards Staff, 409 Third Street, SW, Washington, DC 20416.

I hereby state that rights under contract or law have been conveyed to and remain with the small business concern identified above with regard to the invention described in:

- ☐ the specification filed herewith with title as listed above.
☒ the application identified above.
☐ the patent identified above.

If the rights held by the above identified small business concern are not exclusive, each individual, concern, or organization having rights in the invention must file separate statements as to their status as small entities, and no rights to the invention are held by any person, other than the inventor, who would not qualify as an independent inventor under 37 CFR 1.9(c) if that person made the invention, or by any concern which would not qualify as a small business concern under 37 CFR 1.9(d), or a nonprofit organization under 37 CFR 1.9(e).

Each person, concern, or organization having any rights in the invention is listed below:

- ☒ no such person, concern, or organization exists.
☐ each such person, concern, or organization is listed below.

Separate statements are required from each named person, concern or organization having rights to the invention stating their status as small entities. (37 CFR 1.27)

I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance

NAME OF PERSON SIGNING

Dr. Marion Wendt-Ginsberg

TITLE OF PERSON IF OTHER THAN OWNER

General Manager

ADDRESS OF PERSON SIGNING

M&F ENTWICKLUNGS-UND PATENTVERWERTUNGS - GmbH

SIGNATURE

Dr. Marion Wendt-Ginsberg

DATE

Oct. 26, 2000

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Description

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Flap-type grinding tool

5 Field of the invention

The invention relates to a flap-type grinding tool, which is configured symmetrically about an axis of rotation, having a plurality of abrasive flaps disposed on the periphery and/or end faces, a support body, on which the abrasive flaps are fixed, and a device for connecting the flap-type grinding tool to a drive apparatus, the support body having at least one rotationally symmetrical lateral surface, on which the abrasive flaps are at least partly fixed and a rapid clamping apparatus for connecting a flap-type grinding tool to a drive apparatus and a set comprising a flap-type grinding tool and a rapid clamping apparatus.

Such flap-type grinding tools are preferably used for the treatment of surfaces, especially in the manufacture of molds or car bodies. Special advantages are the resilient adaptation of the abrasive flaps to the contour of the workpiece and the cool grinding. The arrangement of the flaps also results in these tools having a very long service life.

Background of the invention

Abrasive belts with a flap-shaped configuration are known per se, for example from GB 938 223 A1. DE 85 23 363 U1 has disclosed that such an abrasive belt can be tensioned on a hollow cylinder having the dimensions of a steel belt coil to eliminate pressure marks formed when steel belt is wound up onto contact pressure rolls of the winding-on machine before such

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marks can result in impairments of the surface quality of the steel belt.

Flap-type grinding tools are known in the prior art for the treatment of especially shaped workpiece surfaces, without damaging the surface by striation and the like. Particularly in toolmaking and mold manufacture, such flap-type grinding tools with a radial set of abrasive flaps for fine grinding and polishing work on larger radii have been widely adopted.

Such fan-type grinders for peripheral grinding normally consist of a shaft whereby the grinding tool can be clamped, for example, in a drill chuck, which is shaped and is bonded or pressure-fitted to a rigid core of the fan-type grinder. The flaps are fixed on the core radially, by being bonded in grooves, or tangentially in a layer of adhesive or grouting. Such fan-type grinders are also commercially available, for instance described in US 4,090,333 A, and an embodiment for securing to a shaft by screwing is also described in DE-GM 1 986 971.

US 3,406,488 A has disclosed a fan-type grinder having a multiplicity of abrasive flaps embedded in a radial arrangement in a casing made of relatively hard tough resinous material. This casing made of resinous material is secured on each face side to a sheet metal cover plate having a hole for receiving a driving shaft. The sheet metal cover plates comprise an annular flange directed to the casing, which flange engages into complementary grooves of the abrasive flaps to provide a positive locking preventing the flaps from radial flying out in case they disengage with the resinous binding. The disclosure of US 3,406,488 A relates in general to the advantages of inserting specific elastomeric compounds into the grooves of the

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abrasive flaps, where these engage with the flanges of the cover plates. Thus, the mechanical service time of fan-type grinders should be improved to prevent from breaking or disintegration of such fan-type grinders, which will be generally caused by redundancy of the fixings.

Also commercially known is a design of such a fan-type grinder having a radial set of abrasive flaps, in which the core in which the drive shaft is inserted is designed with a recessed end face in order to make it possible for the end faces also of the radially inserted abrasive flaps to be brought in contact with the workpiece. Such a design is also described in the 93/94 tool catalog of Hch. Perschmann GmbH, Braunschweig.

DE 40 07 928 A1 and EP 0 446 626 A1 have disclosed grinding sleeves for peripheral grinding which, to improve economy when such fan-type grinders are used, can be clamped onto a reusable abrasive belt body. In this arrangement, an abrasive belt body of this type comprises the shaft for connection to a drive machine and a rubber body arranged between cones which fixes the grinding sleeve radially by clamping the cones. Such a commercially available abrasive belt body is described, for example, in the 93/94 tool catalog of Hch. Ferschmann GmbH, Braunschweig.

For the treatment of weld seams, surface grinding, rust removal and trimming of castings, fan-type grinding wheels are known for use on angle grinding machines in which the set of abrasive flaps is disposed end-on on a disk. Such disks are commercially available, for example, under the name Pferd Polifan and described in the 93/94 tool catalog of Hch. Perschmann GmbH, Braunschweig. These disks consist of a supporting plate of glass-cloth mats which are axially

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fitted end-on with abrasive flaps and possess at the center a customary receiving hole for fastening to the output spindle of an angle grinder. Glass-cloth mats are used to ensure that the plate with the flaps wears down evenly when the tool is fitted and allows the flaps to be fully consumed.

Such fan-type grinding wheels for use on angle machines of the type described above are also known from DE 195 11 004 C1. As a specialty it is mentioned that the supporting plate is made of wooden chips or scrap embedded in a resinous binder of hardened phenolic and melamine resins forming a wooden reinforced plastic material. By choosing this material a particularly cost effective manufacturing should be provided. Under environmental aspects this choose of material for the supporting plate, which will be left as waste after consumption of the fan-type grinding wheel, however, may provide nowadays an unclear situation with respect to recycling of the wooden compound material.

From 'Patent Abstracts of Japan' relating to JP 60 094271 A a polishing wheel is known having in general the same structure as above, however, portions of a textile material are mounted for polishing instead of abrasive flaps to allow polishing of surfaces using similar machinery and machining methods.

DE 89 03 423 U1 has disclosed an abrasive flap disk for use with angle grinders in which a number of abrasive flaps are arranged on a disk-shaped carrier on both end faces, first in order to permit the treatment of walls of relatively narrow grooves and secondly in order to obtain an increased service life of the disk as a result of reversibility. To this end, the useful areas, each made of abrasive flaps arranged in a

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total of 6 packages made from a multiplicity of abrasive and grinding sheets replaceable within a hub made with considerable efforts. The abrasive and grinding sheets of each package are supported by an annular bend supporting pin extending through corresponding punch outs within a section of the abrasive or grinding sheets, which pin is supported in a groove provided within the hub, outside of the recesses for the packages, thus securing the packages of abrasive or grinding sheets against flying off during operation of the tool due to centrifugal force. Because of this design principle of this tool extremely high manufacturing efforts are required for many milling operations to obtain recesses and grooves. Further, the tool is made of many parts causing complicated mounting and thus certainly causing a risk of accidents in case the user tries to replace used grinding sheets on his own. More further, a significant part of the grinding sheets stay as waste since the punch outs for housing the supporting pins within the grinding sheets require some distance from the edge of the grinding sheet to prevent the holes from tearing out and the grinding sheets from flying off during operation.

Furthermore it is impossible due to the design principle used to uniformly arrange the grinding sheets on the circumference as wall areas are required on the hub between two grinding sheet packages to have the hub receiving the forces of the supporting pins.

More further there is exclusively disclosed a receiving flange with an internal thread for fixing on a driving shaft in connection with the described tool. As no details are disclosed, from the view of a person skilled in the art a metrical threading of the M 14 dimension could be mend as usual for such applications.

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The object of the invention is therefore to provide flap-type grinding tools and corresponding accessories with which, with no reduction in operational safety, more economic use with improved production of waste and broader range of applications are possible.

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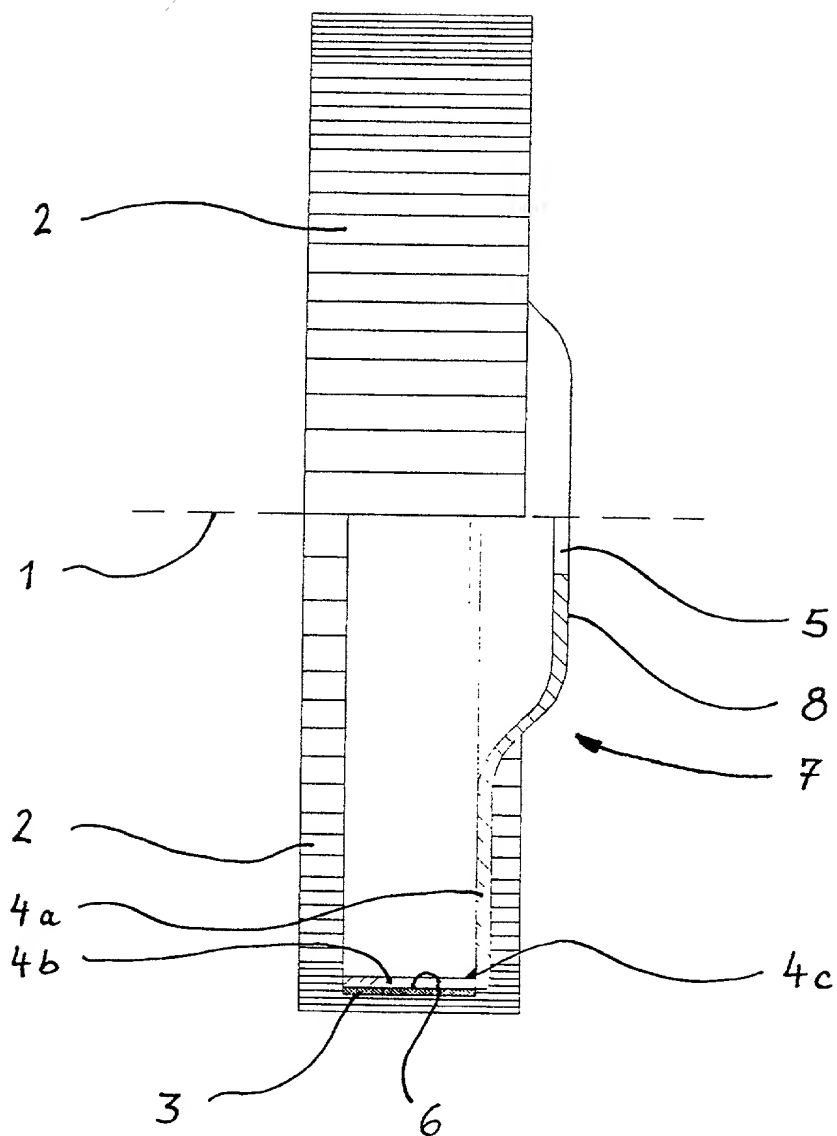


Fig. 1

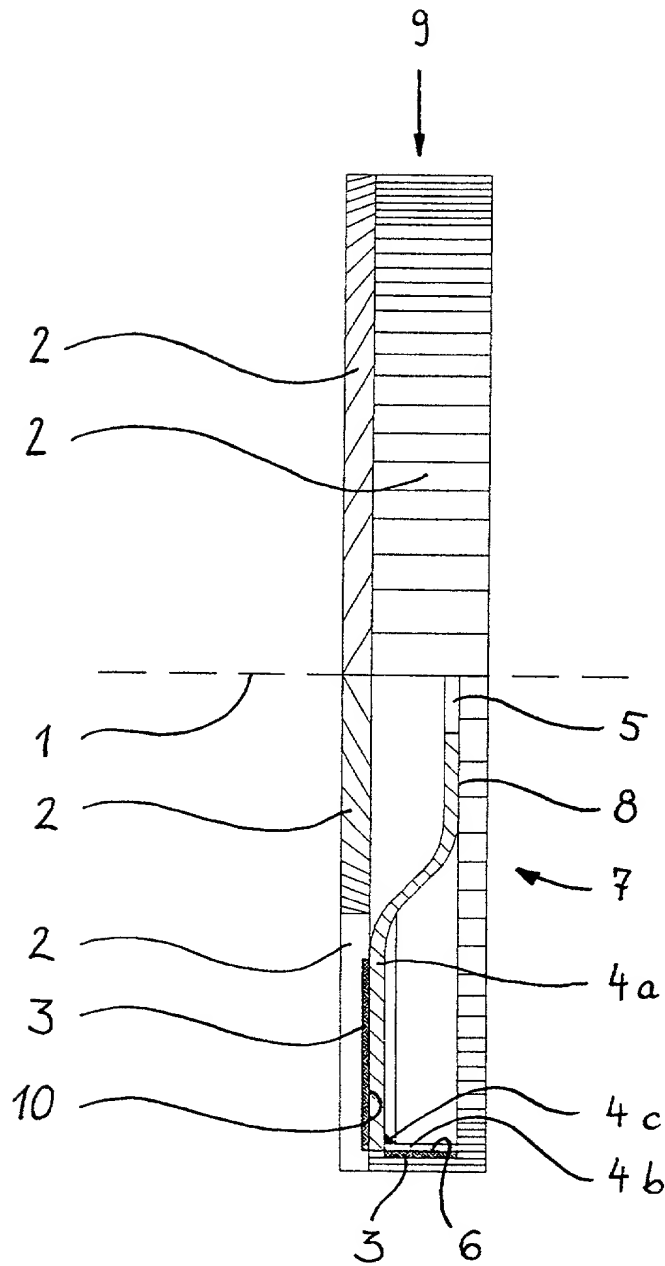


Fig. 2

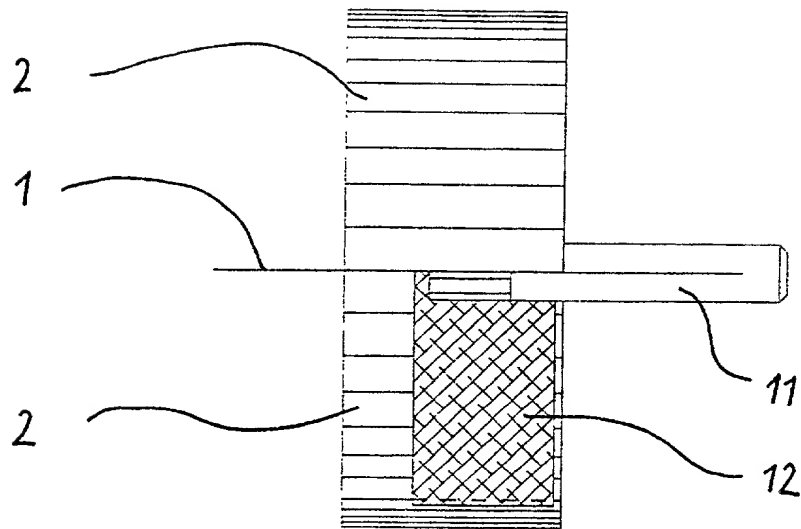


Fig. 3

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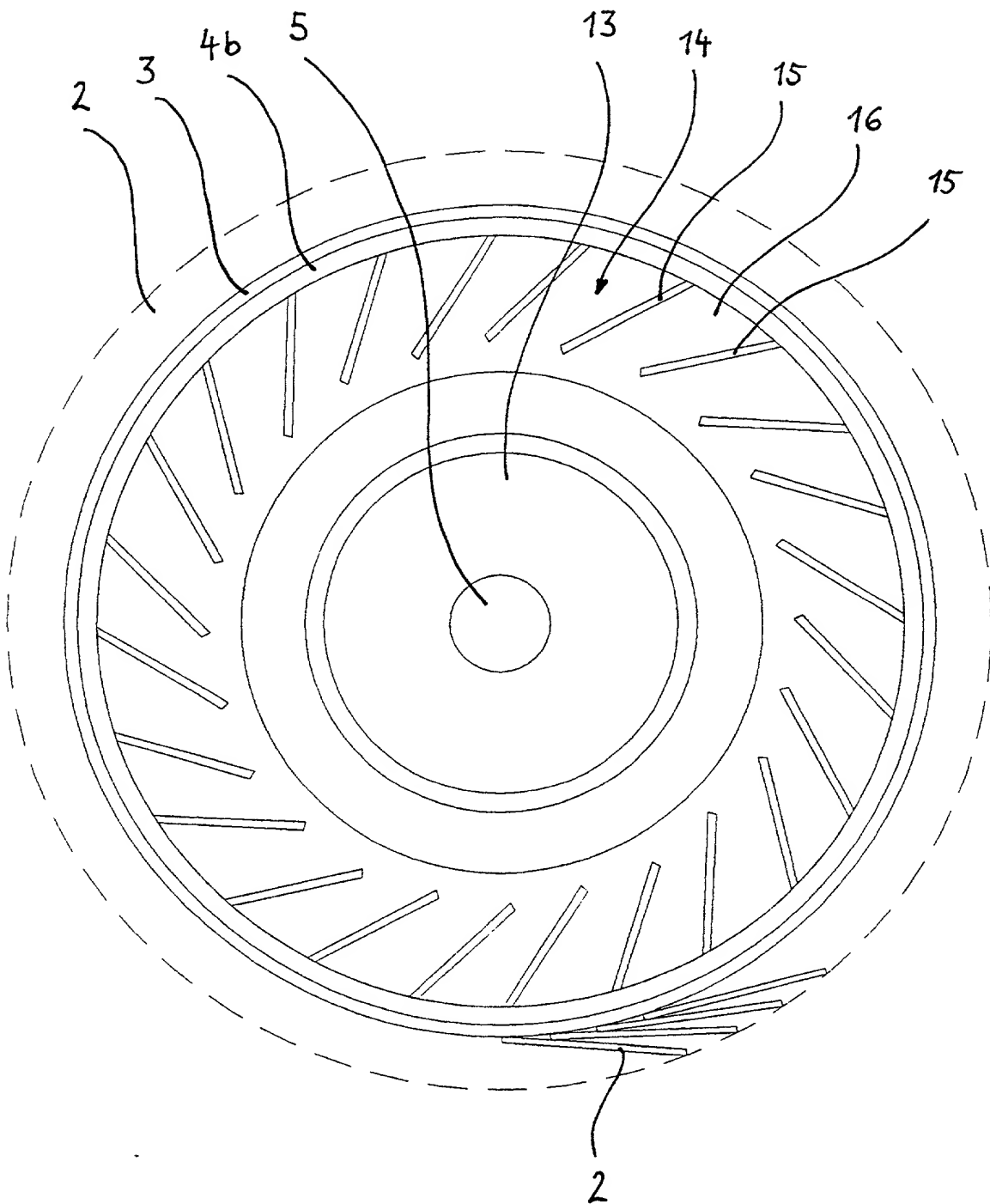


Fig. 4

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Declaration and Power of Attorney for Patent Application Erklärung für Patentanmeldungen mit Vollmacht

German Language Declaration

Als nachstehend benannter Erfinder erkläre ich hiermit an Eides Statt:

daß mein Wohnsitz, meine Postanschrift und meine Staatsangehörigkeit den im nachstehenden nach meinem Namen aufgeführten Angaben entsprechen, daß ich nach bestem Wissen nur ein Name angegeben ist) oder ein ursprünglicher, erster und Miterfinder (falls nachstehend mehrere Namen aufgeführt sind) des Gegenstandes bin, für den dieser Antrag gestellt wird und für den ein Patent für die Erfindung mit folgendem Titel beantragt wird:

LAMELENSCHLEIFWERKZEUG

deren Beschreibung hier beigefügt ist, es sei denn (in diesem Falle Zutreffendes bitte ankreuzen), diese Erfindung

- ☒ wurde angemeldet am 9/21/2000
unter der US-Anmeldenummer oder unter der
Internationalen Anmeldenummer im Rahmen des
Vertrags über die Zusammenarbeit auf dem Gebiet
des Patentwesens (PCT)
Not Yet Assigned und am
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zutreffend).

Ich bestätige hiermit, daß ich den Inhalt der oben angegebenen Patentanmeldung, einschließlich der Ansprüche, die eventuell durch einen oben erwähnten Zusatzantrag abgeändert wurde, durchgesehen und verstanden habe.

Ich erkenne meine Pflicht zur Offenbarung jeglicher Informationen an, die zur Prüfung der Patentfähigkeit in Einklang mit Titel 37, Code of Federal Regulations, § 1.56 von Belang sind.

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

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I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, § 1.56.

German Language Declaration

Ich beanspruche hiermit auslandische Prioritätsvorteile gemäß Title 35, US-Code, § 119 (a)-(d), bzw. § 365(b) aller unten aufgeführten Auslandsanmeldungen für Patente oder Erfinderurkunden, oder § 365(a) aller PCT internationalen Anmeldungen, welche wenigstens ein Land ausser den Vereinigten Staaten von Amerika benennen, und habe nachstehend durch ankreuzen sämtliche Auslandsanmeldungen für Patente bzw. Erfinderurkunden oder PCT internationale Anmeldungen angegeben, deren Anmeldetag dem der Anmeldung, für welche Priorität beansprucht wird, vorangeht

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21/03/98
(Day/Month/Year Filed)
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David P. Maivald, Esq., Reg. No. 42,831
Doepken Keevican & Weiss

Postanschrift: Raymond J. Hammuth, Esq.
USX Tower - 58th Floor, 600 Grant Street
Pittsburgh, PA 15219

Telefonische Auskünfte: (Name und Telefonnummer)
Raymond J. Hammuth, Esq.
(412) 355-2600

POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith: (list name and registration number)

Raymond J. Hammuth, Esq. Reg. No., 33,896
David P. Maivald, Esq. Reg. No. 42,831
Doepken Keevican & Weiss

Send Correspondence to: Raymond J. Hammuth, Esq.

USX Tower - 58th Floor, 600 Grant Street
Pittsburgh, PA 15219

Direct Telephone Calls to: (name and telephone number)
Raymond J. Hammuth, Esq.
(412) 355-2600

Vor- und Zuname des einzigen oder ersten Erfinders <u>MARION WENDT-GINSBERG</u>	Full name of sole or first inventor <u>MARION WENDT-GINSBERG</u>
Unterschrift des Erfinders <u>[Signature]</u> Datum <u>10/26/2000</u>	Inventor's Signature <u>[Signature]</u> Date <u>10/26/2000</u>
Wohnsitz <u>Herbergstrasse 3</u> <u>D-51570 Windeck, Germany</u>	Residence <u>Herbergstrasse 3</u> <u>D-51570 Windeck, Germany</u> <u>DE</u>
Staatsangehörigkeit <u>Germany</u>	Citizenship <u>Germany</u>
Postanschrift <u>Herbergstrasse 3</u> <u>D-51570 Windeck, Germany</u>	Post Office Address <u>Herbergstrasse 3</u> <u>D-51570 Windeck, Germany</u>
Vor- und Zuname des zweiten Miterfinders (falls zutreffend) <u>FRANK WENDT</u>	Full name of second joint inventor, if any <u>FRANK WENDT</u>
Unterschrift des zweiten Erfinders <u>[Signature]</u> Datum <u>10/26/2000</u>	Second Inventor's Signature <u>[Signature]</u> Date <u>10/26/2000</u>
Wohnsitz <u>Herbergstrasse 13</u> <u>D-51570 Windeck, Germany</u>	Residence <u>Herbergstrasse 13</u> <u>D-51570 Windeck, Germany</u> <u>DE</u>
Staatsangehörigkeit <u>Germany</u>	Citizenship <u>Germany</u>
Postanschrift <u>Herbergstrasse 13</u> <u>D-51570 Windeck, Germany</u>	Post Office Address <u>Herbergstrasse 13</u> <u>D-51570 Windeck, Germany</u>

(Im Falle dritter und weiterer Miterfinder sind die entsprechenden Informationen und Unterschriften hinzuzufügen.)

(Supply similar information and signature for third and subsequent joint inventors.)